

Presse | News | Prensa | Tisk | Imprensa | Prasa | Stampa | Pers | 新闻 | Пресса

UR:BAN research initiative presents innovative driver assistance systems of tomorrow

Braunschweig / Wolfsburg, 14 May 2014 – The UR:BAN research initiative (UR:BAN = Urban space: user-friendly assistance systems and network management) presented its interim half-time results this morning in a presentation in Braunschweig. Together with its 30 partners, Volkswagen Group Research is there to present intelligent and cooperative driver assistance systems for future transportation which will enable safe, stress-free and rapid driving in complex urban traffic. UR:BAN has been working on innovative assistance systems for complex traffic situations in urban traffic since January 2012. Urban traffic is increasingly being defined by its dynamism and its wide variety of traffic participants and vehicles. Volkswagen Group Research is involved in all three pillars of the UR:BAN project: "Cognitive Assistance", "Human Factors in Traffic" and "Networked Traffic System".

In the "**Cognitive Assistance**" project, Volkswagen Group Research is developing three innovative assistance systems which assist the driver in urban traffic, inform the driver in a timely way, recommend appropriate manoeuvres and can even intervene in an emergency. In an effective and situation-specific way, these systems offer safe longitudinal and transverse guidance to help the driver realize a mode of driving in urban traffic that is anticipatory, safe and relaxed.

For example, the "Lane changing assistant" assists with active interventions in longitudinal and transverse guidance when switching driving lanes in dense traffic on urban access and arterial roads. During a manoeuvre, the system observes surrounding vehicles with all-round 360° monitoring and assists the driver in selecting an open space in the destination lane and approaching it by indicators and steering movements.

The "Bottleneck assistant", on the other hand, helps the driver if there are vehicles that are parking which are partially or completely blocking the driving lane, for example, so that only a very narrow passage is possible. An advanced development of the Lane Assist system that is already in production cars detects obstacles in the car's own driving lane as well as in opposing traffic with a sensor that visualises the surroundings in 3D. The system checks whether a safe path exists, and it assists by active steering intervention when driving past the obstacle while maintaining a safe distance.

The "Emergency braking assistant" reduces or even avoids imminent collisions in the urban environment by situation-specific braking and steering interventions.

In the second pillar of the project, "**Human Factors in Traffic**", Volkswagen Group Research is working on a new type of human-machine interface. This is an intelligent communications channel that will take information, filter and prioritise it and present it to the driver as needed.

Page 2

It thereby contributes significantly towards achieving an anticipatory style of driving, it can make hazardous situations safer and it promotes low-emissions driving.

At today's half-time presentation, all three systems and the human-machine interface could be experienced in realistic urban driving situations in a dynamic driving simulator. The second half of the project will involve integrating these assistance systems in test vehicles, so that they can be experienced in real traffic.

In the "**Networked Traffic System**" subproject, Volkswagen Group Research is developing the "Intersection Pilot", with the goal of improving traffic efficiency in the vicinity of intersections based on Car-to-X communication. This assistance function informs the driver locally about traffic nodes located ahead. It supports the driver with optimal driving manoeuvres and simultaneously enables improved traffic light switching by routing vehicle information.

The "Merge and start assistant" recommends an optimal speed right at the entrance to the intersection to enable driving through on a green traffic light phase without having to stop. If a stop is unavoidable, this manoeuvre is also made as efficient and convenient as possible by choosing a good stopping point for a "flying start", which significantly reduces the start-up losses that are typical today. This lets more vehicles pass during the short green phase, which benefits all traffic participants.

The "Emergency vehicle assistant" informs all traffic participants directly of approaching emergency vehicles. It optimises traffic light switching and ensures more rapid passage of the emergency vehicle that is safer for all vehicles.

About the UR:BAN project

Urban space: user-friendly assistance systems and network management.

31 partners from the automotive manufacturing and supplier industries, electronics and software companies, research institutes and cities, have joined together in the consortium project UR:BAN. In joint research work, they will develop new driver assistance and traffic management systems for the city by early 2016. The total budget for the research consortium is 80 million euros. Around 50 per cent of this amount is contributed by the German Federal Ministry for Economy and Energy in the framework of the 3rd traffic research programme of the German federal government.

Participants include: Adam Opel AG, AUDI AG, BMW AG, BMW Forschung und Technik GmbH, Robert Bosch GmbH, German Federal Institute for Road Transportation, Continental Automotive GmbH, Continental Safety Engineering International GmbH, Continental Teves AG & Co. oHG, Daimler AG, German Aerospace Centre e.V., Fraunhofer Institute for Labor Economy and Organisation (IAO), GEVAS Software GmbH, Heusch/Boesefeldt GmbH, University of Applied Sciences Technology and Business of the State of Saarland, ifak Magdeburg e.V., MAN Truck & Bus AG, PTV Group, Institute of Automotive Engineering at the RWTH University in Aachen, state capital Düsseldorf, City of Kassel, Tech. University of Braunschweig, Tech. University of Chemnitz, Tech. University of Munich, TomTom

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Page 3

Development Germany GmbH, TRANSVER GmbH, University of the German Army in Munich, universities at Duisburg-Essen, Kassel and Würzburg and Volkswagen AG. Numerous additional university and research institutes as well as small and mid-size companies are also participating in the projects as subcontractors.

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